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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,997	09/06/2002	Todd Allen Brown	201-0498	1849

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EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SW

Office Action Summary

Application No. 10/064,997		Applicant(s) Brown	
Examiner Schwartz		Art Unit 3683	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

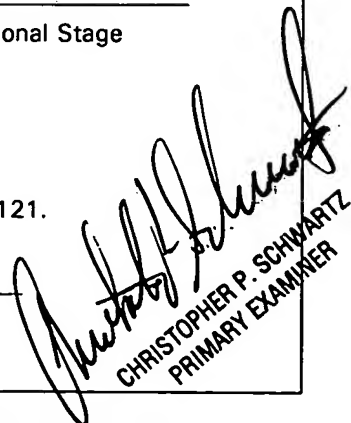
- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>2</u> | 6) <input type="checkbox"/> Other: |


CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

Art Unit:

DETAILED ACTION

Drawings

1. The drawings are objected to because it is unclear at the bottom of figure 2 in the box "112" what the phrase "in Any" is suppose to mean.. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ability to adustably apply regenerative braking torque independently to each wheel must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-26 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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Regarding claim 1 lines 8 and 9 it is unclear from the drawings and the description in the specification how the generator motor can adjustably apply regenerative braking torque independently to each wheel of the first axle. As shown in the drawings the motor 30 is coupled to either a front or rear axle through the planetary gearset (20) and output shaft 44. It would appear that a *common* braking torque is applied to each of the wheels of a particular axle.

See also lines 7 and 8 of claim 4 with regard to the one wheel.

Claims 15, 25 and 26 contain a similar issue as above with the phrase “independently adjustably”.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Kade et al. in view of Tatara et al..

Regarding claim 1 Kade et al. discloses a braking system utilizes both friction and regenerative braking, with the friction brakes applied to at least a first axle and the regenerative brakes applied to a rear or second axle. See column 3. Also disclosed are a plurality of sensors (see col 2 line 15 and note the pedal sensor and column 4 lines 1-8 and lines 62-67 where sensors

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are implied to measure the parameters of wheel slip and steering angle). Note the controller at 38.

Kate et al. lacks the limitation of “adjustably applying regenerative braking torque independently to each wheel of the first axle...” for maintaining vehicle stability

The reference to Tatara et al. discloses a drive force distribution system for a hybrid vehicle similar to that shown by Kate et al where an electric motor provides drive and regenerative braking forces to the rear wheels. Note the clutches at 30 and 32 for controlling the forces applied to each of the rear wheels 10 and 12, independently, during turning of the vehicle. See the discussion on page 1 of this reference second column and in the second column on the last page of this reference.

One having ordinary skill in the art at the time of the invention would have found it obvious to have modified the device of Kade et al. so that the regenerative braking forces on the wheels of the vehicle may be independently controlled during turning of the vehicle, as taught by Tatara et al., to provide the vehicle of Kade et al. with increased stability.

Regarding claims 2-4 the combined teachings of the Kade et al. in view of Tatara et al. meet the claimed limitations.

Regarding claim 5 simply to have reversed the axles on which the friction or non-regenerative and regenerative brakes are applied would have been obvious to the ordinary skilled worker in the art at the time of the invention dependent upon whether the vehicle is a front or rear wheel driven (by the internal combustion engine).

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Regarding claims 6 and 7 note Kade et al., as modified, discusses at the top of column 4 using wheel slip as a parameter in the vehicle stability control system. This is considered to be an alternative equivalent to these claimed limitations.

Regarding claims 12 and 13 the limitations of “greater than 10 percent” and “greater than 5 percent” are relative values and would have been obvious to the ordinary skilled worker in the art in view of the teachings of Kade et al., as modified, dependent upon the braking force distribution desired between friction and regenerative braking under particular road and/or driving conditions.

Regarding claims 8-11,14-26 these limitations are met by Kade et al., as modified by Tatara et al. Note both systems are concerned with vehicle stability and use techniques such as wheel slip, brake pedal depression force, yaw rate, lateral G, steering angle etc. long known in the art to offer a vehicle with good controllability.

Applicant's limitations are considered to be met by or an alternative equivalent to Kade et al., as modified by Tatara et al.

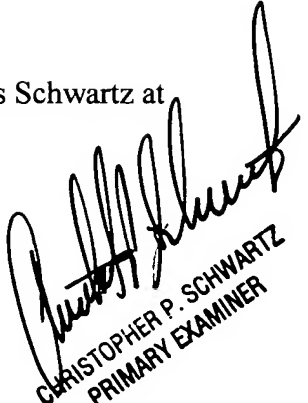
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references to Shimada et al. and Ohba et al. have been cited for showing related types of braking systems..

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8. Any inquiry concerning this communication should be directed to Chris Schwartz at telephone number 703-308-0576.



CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER